

IN THE CLAIMS:

Please amend the claims as follows:

21 (amended) A plasma etching apparatus for etching of a sample comprising:

an etching chamber having a side wall and a replaceable jacket which is held inside of said side wall so as to form a wall surface of said etching chamber and which is removable from the side wall of said etching chamber, the sample being disposed in said etching chamber;

an evacuation system which evacuates said etching chamber by an evacuation system;

an etching gas supply which supplies an etching gas into said etching chamber;

a plasma generator which generates a plasma for performing etching of said sample in said etching chamber; and

a temperature controller which circulates a heat exchanging medium through the interior of said replaceable jacket during etching so as to at least control a temperature of a surface of said replaceable jacket which faces the plasma in said etching chamber within a predetermined range and enables depositing of a coating layer on the surface of said replaceable jacket during etching which prevents the surface of said replaceable jacket from being etched by said plasma.

22. (amended) A plasma etching apparatus according to

claim 21, wherein said temperature controller circulates said heat exchanging medium so as to control the temperature of the surface of said replaceable jacket in a range of 0 to 50°C.

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23. (amended) A plasma etching apparatus according to claim 21, wherein the coating layer is deposited with a thickness which is sufficient to prevent the surface of said replaceable jacket from being etched during etching of the sample by said plasma and which does not peel off during etching of the sample.

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24. (amended) A plasma etching apparatus according to claim 23, wherein the thickness of the coating layer is about 2000 microns.

26. (amended) A plasma etching apparatus for etching a sample comprising:

an etching chamber having a side wall;  
replaceable jacket for protecting the side wall of the etching chamber and which is removable from the side wall of the etching chamber;

a sample holder which holds a sample to be etched within the etching chamber;

means for generating a plasma and for etching the sample within the etching chamber; and

means for preventing etching of a surface of the replaceable jacket which is held inside of the side wall of the etching chamber and faces the plasma during etching of the sample by depositing a coating film on the surface of the replaceable jacket facing the plasma during etching of the sample.

27. (amended) A plasma etching apparatus according to claim 26, wherein the means for preventing etching of the surface of the replaceable jacket includes a temperature controller which circulates a heat exchanging member through the interior of said replaceable jacket during etching of the sample so as to at least control a temperature of the surface of said replaceable jacket which faces the plasma in said etching chamber within a predetermined range.

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28. (amended) A plasma etching apparatus according to claim 27, wherein said temperature controller circulates said heat exchanging medium so as to control the temperature of the surface of said replaceable jacket in a range of 0 to 50°C.

29. (amended) A plasma etching apparatus according to claim 27, wherein the coating layer is deposited with a thickness which is sufficient to prevent the surface of said replaceable jacket from being etched during etching of the